REMARKS

Claims 14-33 are pending in this application. Reconsideration is requested based on the following remarks.

Response to Arguments:

The Applicants appreciate the consideration given to their arguments, and the new grounds of rejection. Further favorable consideration is requested.

Claim Rejections - 35 U.S.C. § 102:

Claims 14, 15, 16, 21, and 22 were rejected under 35 U.S.C. § 102(b) as anticipated by US Patent Application Publication No. 2003/0125031 to Sung Lim et al. (hereinafter "Sung Lim"). The rejection is traversed. Reconsideration is earnestly solicited.

The second and third clauses of claim 14 recite:

> Acquiring positional information on the first mobile station, the second mobile station and the further mobile station.
>
> And:
>
> Determining a route for the connection at a central routing device based on the positional information.

Sung Lim neither teaches, discloses, nor suggests "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14. Sung Lim, in fact, has no "central routing device" at all. Sung Lim, rather, is allocating resources to mobile stations according to services zones. In particular, as described in the Abstract:

> The resource management method comprises the first step of partitioning one cell into a plurality of service zones, the service zones being provided with different services from the system and proportional in number to types of the services, the second step of allowing a radio network controller allocating the resources to mobile stations, to determine which each of said mobile stations is located in any one of the service zones, and the third step of allowing the radio network controller to allocate the resources differentially to the mobile stations according to the determined service zones.

Since Sung Lim is allocating resources to mobile stations according to service zones, Sung Lim is not "determining a route for the connection at a central routing device based on the

positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

Sung Lim, moreover, is allocating resources to mobile stations in one cell such that interference from the other mobile stations is minimized. In particular, as described at paragraph [0006]:

> In order to overcome the above problems, a base transceiver station has to allocate resources to all mobile stations in one cell managed thereby, in such a manner that it is minimized for base transceiver stations of other cells to be subject to interferences by signals from the mobile stations.

Since Sung Lim is allocating resources to mobile stations in one cell such that interference from the other mobile stations is minimized, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

The radio network controller in Sung Lim, moreover, *determines* which of the mobile stations is located in any one of the service zones, instead of relying on positional information "on the first mobile station, the second mobile station and the further mobile station" as recited in claim 14. In particular, as described at paragraph [0013]:

> In accordance with one aspect of the present invention, the above and other objects can be accomplished by the provision of a method for managing resources in a wireless mobile communication system, comprising the steps of: a) partitioning one cell into a plurality of service zones, the service zones being provided with different services from the system and proportional in number to types of the services; b) allowing a radio network controller allocating the resources to mobile stations, to determine which each of the mobile stations is located in any one of the service zones; and c) allowing the radio network controller to allocate the resources differentially to the mobile stations according to the determined service zones.

Since the radio network controller in Sung Lim determines which of the mobile stations is located in any one of the service zones, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

Sung Lim, moreover, partitions the cell geographically on the basis of the position of a *base* transceiver station antenna, instead of relying on positional information "on the first mobile station, the second mobile station and the further mobile station" as recited in claim 14. In

particular, as described at paragraph [0035]:

> One cell can be geographically partitioned on the basis of the position of a base transceiver station antenna. Different cell partition units may be employed according to various types of existing cells. For example, one cell may be partitioned into a plurality of service zones at intervals of 100 m, 200 m or 300 m on the basis of the antenna position, and resources may be managed differentially in the resultant service zones.

Since Sung Lim partitions the cell geographically on the basis of the position of a base transceiver station antenna, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

The base transceiver station in Sung Lim, moreover, broadcasts pilot signals with the same transmission power to all mobile stations in the same cell, which the mobile stations used to calculate a path loss value from the base transceiver station, instead of relying on positional information "on the first mobile station, the second mobile station and the further mobile station" as recited in claim 14. In particular, as described at paragraph [0036]:

> In general terms, a base transceiver station broadcasts pilot signals with the same transmission power to all mobile stations in the same cell. Each mobile station receives pilot signals from the base transceiver station over pilot signals and then calculates a path loss value from the base transceiver station thereto.

Since the base transceiver station in Sung Lim broadcasts pilot signals with the same transmission power to all mobile stations in the same cell, which the mobile stations used to calculate a path loss value from the base transceiver station, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

The *base* transceiver station in Sung Lim, moreover, determines a service zone to which each mobile station belongs, instead of relying on positional information "on the first mobile station, the second mobile station and the further mobile station" as recited in claim 14. In particular, as described at paragraph [0037]:

> Each mobile station sends the calculated path loss value to the base transceiver station, which then calculates a distance to each mobile station on the basis of the sent path loss value. Thereafter, the base transceiver station determines, on the basis of the calculated distance, a service zone to which each mobile station belongs, and manages resources of each mobile station corresponding to the

determined service zone.

Since the base transceiver station in Sung Lim determines a service zone to which each mobile station belongs, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

The *base* transceiver station in Sung Lim, moreover, determines from the measured signal strengths service zones where the mobile stations are currently present, instead of relying on positional information "on the first mobile station, the second mobile station and the further mobile station" as recited in claim 14. In particular, as described at paragraph [0043]:

> All mobile stations in the same cell send messages evenly to a base transceiver station upon synchronization with the base transceiver station. The base transceiver station measures the strengths of signals sent from all the mobile stations and determines from the measured signal strengths service zones where the mobile stations are currently present, respectively.

Since the base transceiver station in Sung Lim determines from the measured signal strengths service zones where the mobile stations are currently present, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

The radio network controller in Sung Lim, moreover, recognizes service zones where all mobile stations in one cell are currently present, instead of relying on positional information "on the first mobile station, the second mobile station and the further mobile station" as recited in claim 14. In particular, as described at paragraph [0044]:

> By way of the above-described methods, a radio network controller (RNC) can recognize service zones where all mobile stations in one cell are currently present, respectively. That is, for forward control, a mobile station can measure the strength of a signal from a base transceiver station and determine from the measured result a service zone where it is currently located. For reverse control, the base transceiver station can measure the strength of a signal from the mobile station and determine from the measured result a service zone where the mobile station is currently located. At this time, the radio network controller allocates resources to the mobile station according to a resource management strategy in consideration of the current system capacity.

Since the radio network controller in Sung Lim recognizes service zones where all mobile stations in one cell are currently present, Sung Lim is not "determining a route for the connection

at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14.

The radio network controller in Sung Lim, finally, is only managing resources efficiently, instead of "determining a route for the connection at a central routing device based on the positional information" as recited in claim 14. In particular, as described at paragraph [0058]:

> Therefore, a radio network controller can more efficiently manage resources by providing the resources differentially to a plurality of service zones in one cell, resulting in an increase in system capacity.

Since the radio network controller in Sung Lim is only managing resources efficiently, Sung Lim is not "determining a route for the connection at a central routing device based on the positional information," where the positional information is "on the first mobile station, the second mobile station and the further mobile station," as recited in claim 14. Claim 14 is thus submitted to be allowable. Withdrawal of the rejection of claim 14 is earnestly solicited.

Claims 15, 16, 21, and 22 depend from claim 14 and add additional distinguishing elements. Claims 15, 16, 21, and 22 are thus also submitted to be allowable. Withdrawal of the rejection of claims 15, 16, 21, and 22 is earnestly solicited.

Claims 31, 32, and 33:

Claims 31, 32, and 33 were rejected under 35 U.S.C. § 102(b) as anticipated by US Patent Application Publication No. 2001/0036810 to Larsen et al. (hereinafter "Larsen"). The rejection is traversed. Reconsideration is earnestly solicited.

The third and fourth clauses of claim 31 recite:

> A storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station.
> A central routing device to determine a route for a connection between the first mobile station and the second mobile station via the further mobile station and to generate routing information for the route, the route being determined based on the positional information stored in the storage device.

Larsen neither teaches, discloses, nor suggests "a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station," and "a central routing device to determine a route for a connection between the first mobile station and the second mobile station via the further mobile station and to generate routing information for the route, the route being determined based on the positional information stored in the storage device," as recited in claim 31. Larsen, rather, is relaying data between

mobile stations in a cellular communications system, as described in the Abstract.

The mobile stations in Larsen, moreover, use probe data to obtain connectivity information relating to the availability of other mobile stations, instead of a "central routing device" determining "a route for a connection between the first mobile station and the second mobile station via the further mobile station" as recited in claim 31. In particular, as described at paragraph [0006]:

> According to the invention there is provided a method of relaying data between mobile stations in a cellular wireless communication system which comprises a plurality of mobile stations and a plurality of base stations, the method comprising the making of synchronisation transmissions from each base station within an area of coverage of the base stations, the synchronisation transmissions defining a broadcast control channel for the transmission of broadcast data from the base station to mobile stations within the area of coverage; receiving the synchronisation transmissions at mobile stations within the area of coverage and extracting data therefrom defining the broadcast control channel, and at least one calling channel on which mobile stations can transmit probe data to one another, the probe data being used by mobile stations to obtain connectivity information relating to the availability of other mobile stations.

Since the mobile stations in Larsen use probe data to obtain connectivity information relating to the availability of other mobile stations, Larsen does not describe “a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station,” and “a central routing device to determine a route for a connection between the first mobile station and the second mobile station via the further mobile station and to generate routing information for the route, the route being determined based on the positional information stored in the storage device,” as recited in claim 31.

The mobile stations in Larsen, moreover, derive local connectivity information for other mobile stations from a broadcast probe message, instead of a "central routing device" determining "a route for a connection between the first mobile station and the second mobile station via the further mobile station" as recited in claim 31. In particular, as described at paragraph [0014]:

> The mobile stations transmit so-called broadcast probe messages on the calling channel which contain several parameters, such as transmission power, local background noise level and path loss data. This information allows a mobile station receiving a broadcast probe message from a neighbouring mobile station to derive a local connectivity indicator for that neighbour. Each mobile station maintains a list of local connectivity indicators for each neighbouring station. This neighbour list is included in broadcast probe messages sent out by each mobile station, so that on receiving a broadcast probe message including a neighbour list, a mobile station can derive local connectivity information for other mobile

stations up to two hops away.

Since the mobile stations in Larsen derive local connectivity information for other mobile stations from a broadcast probe message, Larsen does not describe “a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station,” and “a central routing device to determine a route for a connection between the first mobile station and the second mobile station via the further mobile station and to generate routing information for the route, the route being determined based on the positional information stored in the storage device,” as recited in claim 31.

The mobile stations in Larsen, finally, derive routes or methods of relaying information or data to and from the base stations by probing and adapting their power and transmissions to gather a certain number of neighbours, instead of a "central routing device" determining "a route for a connection between the first mobile station and the second mobile station via the further mobile station" as recited in claim 31. In particular, as described at paragraph [0157]:

> In order for mobile stations (mobiles) in the network to derive routes or methods of relaying information or data to and from the base stations, they probe and adapt their power and transmissions to gather a certain number of neighbours. This probing is done on an adaptive basis where the power level and the rate of probing and the interval between probing is set based upon the feedback from the other stations as described in South African patent no. 98/4891.

Since the mobile stations in Larsen derive routes or methods of relaying information or data to and from the base stations by probing and adapting their power and transmissions to gather a certain number of neighbours, Larsen does not describe “a storage device to store positional information regarding the first mobile station, the second mobile station and the further mobile station,” and “a central routing device to determine a route for a connection between the first mobile station and the second mobile station via the further mobile station and to generate routing information for the route, the route being determined based on the positional information stored in the storage device,” as recited in claim 31. Claim 31 is thus also submitted to be allowable. Withdrawal of the rejection of claim 31 is earnestly solicited.

Claim 32:

The second clause of claim 32 recites:

> A route generating unit to generate a route for a connection between a first mobile station and a second mobile station by way of at least one further mobile station using positional information for the first mobile station, the second mobile station and the further mobile station.

Larsen neither teaches, discloses, nor suggests "a route generating unit to generate a route for a connection between a first mobile station and a second mobile station by way of at least one further mobile station using positional information for the first mobile station, the second mobile station and the further mobile station," as discussed above with respect to the rejection of claim 31. Claim 32 is thus also submitted to be allowable, for at least those reasons discussed above with respect to the rejection of claim 31. Withdrawal of the rejection of claim 32 is earnestly solicited.

Claim 33:

The second clause of claim 33 recites:

> A receiver to receive and evaluate connection routing information generated by a central routing device based on positional information for the mobile station, a first mobile unit and a second mobile unit.

Larsen neither teaches, discloses, nor suggests "a receiver to receive and evaluate connection routing information generated by a central routing device based on positional information for the mobile station, a first mobile unit and a second mobile unit," as discussed above with respect to the rejection of claim 31. Claim 33 is thus also submitted to be allowable, for at least those reasons discussed above with respect to the rejection of claim 31. Withdrawal of the rejection of claim 33 is earnestly solicited.

Claims 17, 18, and 24-27:

Claims 17-20 and 23-30 were rejected were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sung Lim in view of U.S. Patent Application Publication No. 2005/0282554 to Shyy et al. (hereinafter "Shyy"). The rejection is traversed. Reconsideration is earnestly solicited.

Claims 17-20 and 23-30 depend from claim 14 and add further distinguishing elements. Sung Lim neither teaches, discloses, nor suggests "acquiring positional information on the first mobile station, the second mobile station and the further mobile station," and "determining a route for the connection at a central routing device based on the positional information," as discussed above with respect to the rejection of claim 14. Shyy does not either, and thus cannot make up for the deficiencies of Sung Lim with respect to claims 17-20 and 23-30. Claims 17-20 and 23-30 are thus submitted to be allowable. Withdrawal of the rejection of claims 17-20 and 23-30 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 14-33 are allowable over the cited references. Allowance of all claims 14-33 and of this entire application is therefore respectfully requested.

Finally, if there are any formal matters remaining after this response, the Examiner is invited to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge them to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: November 15, 2010

By: /Thomas E McKiernan/
Thomas E. McKiernan
Registration No. 37,889

1201 New York Avenue, N.W., 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501